

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Currently amended). A therapeutically effective composition comprising: a therapeutically active isolated and purified antibody, which specifically binds to an amino acid sequence, RSATEEEPPNDD (SEQ ID NO: 1) of the α -subunit of ($\text{Na}^+ + \text{K}^+$)-ATPase enzyme and cardiac isoforms thereof, wherein binding of a therapeutic amount of the antibody to the amino acid sequence, RSATEEEPPNDD (SEQ ID NO: 1) increases myocyte intracellular diastolic or systolic calcium.

2. (Canceled).

3. (Currently amended). The therapeutically effective composition of claim 1, wherein binding of the antibody to the amino acid sequence, RSATEEEPPNDD, of the α -subunit of ($\text{Na}^+ + \text{K}^+$)-ATPase exerts a positive inotropic effect in cardiac myocytes or in a heart for treatment of heart failure.
~~for prevention and treatment of heart diseases.~~

4. (Currently amended) The therapeutically effective composition of claim 3, wherein the amino acid sequence is an antigen or a component of a vaccine, and the antibody is a polyclonal antibody, a monoclonal antibody, a humanized antibody or a human antibody.

Claims 5-6. (Canceled).

7. (Previously amended). The therapeutically effective composition of claim 1, wherein the antibody is administered to a patient in an effective therapeutic amount for treatment of heart failure or muscle contractile disorders.

8. (Withdrawn). An antibody which recognizes the amino acid sequence comprising DVEDSYGQQWTYEQR of the α -subunit of $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$ enzyme, of which recognizes an isoform of the amino acid sequence.

9 (Withdrawn). The antibody of claim 8, wherein binding of the antibody to the amino acid sequence, DVEDSYGQQWTYEQR, of the α -subunit of $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$ increases myocyte intracellular diastolic and systolic calcium.

10. (Withdrawn). The antibody of claim 8, wherein binding of the antibody to the amino acid sequence, DVEDSYGQQWTYEQR, of the α -subunit of $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$ exerts a positive inotropic effect in cardiac myocytes.

11. (Withdrawn). The antibody of claim 8, wherein the antibody is a polyclonal antibody.

12. (Withdrawn). The antibody of claim 8, wherein the antibody is a monoclonal antibody.

13. (Withdrawn). The antibody of claim 8, wherein the antibody is a humanized antibody.

14. (Withdrawn). The antibody of claim 8, wherein the antibody is administered to a patient in an effective therapeutic amount to treat the patient suffering from or susceptible to heart disease and/or muscle contractile disorders.

15. (Withdrawn). A purified peptide comprising the amino acid sequence RSATEEEPPNDD or derivatives or isoform thereof.

16. (Withdrawn). The peptide of claim 15, wherein the peptides are administered individually or in combination in a pharmaceutically acceptable carrier to a patient.

17. (Withdrawn). A nucleic acid vector encoding an amino acid sequence comprising RSATEEEPPNDD or isoform thereof.

18. (Withdrawn). The vector of claim 17, wherein the vector comprises tissue specific promoters.

19. (Withdrawn). The vector of claim 17, wherein the tissue specific promoters are cardiac tissue specific.

20. (Withdrawn). The vector of claim 17, wherein the in vivo generated antibodies bind to the amino acid sequence, RSATEEEPPNDD, of the α -subunit of $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$.

21. (Withdrawn). The vector of claim 18, wherein binding of the in vivo generated antibodies to the amino acid sequence, RSATEEEPPNDD, of the α -subunit of $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$ increases myocyte intracellular diastolic and systolic calcium.

22. (Withdrawn). The vector of claim 18, wherein binding of the in vivo generated antibodies to the amino acid sequence, RSATEEEPPNDD, of the α -subunit of (Na⁺+K⁺)-ATPase exerts a positive inotropic effect in cardiac myocytes.

23. (Withdrawn). The vector of claim 18, wherein the vector is administered to a patient in an effective therapeutic amount to treat the patient suffering from or susceptible to heart disease and/or muscle contractile disorders.

24. (Withdrawn). A purified peptide comprising the amino acid sequence DVEDSYGQQWTYEQR or derivative or isoform thereof.

25. (Withdrawn). The peptide of claim 24, wherein the peptides are administered individually or in combination in a pharmaceutically acceptable carrier to a patient.

26. (Withdrawn). A nucleic acid vector encoding an amino acid sequence comprising DVEDSYGQQWTYEQR.

27. (Withdrawn). The vector of claim 26, wherein the vector comprises tissue specific promoters.

28. (Withdrawn). The vector of claim 27, wherein the tissue specific promoters are cardiac tissue specific.

29. (Withdrawn). The vector of claim 26, wherein the in vivo generated antibodies bind to the amino acid sequence, DVEDSYGQQWTYEQR, of the α -subunit of $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$.

30. (Withdrawn). The vector of claim 27, wherein binding of the in vivo generated antibodies to the amino acid sequence, DVEDSYGQQWTYEQR, of the α -subunit of $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$ increases myocyte intracellular diastolic and systolic calcium.

31. (Withdrawn). The vector of claim 27, wherein binding of the in vivo generated antibodies to the amino acid sequence, DVEDSYGQQWTYEQR, of the α -subunit of $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$ exerts a positive inotropic effect in cardiac myocytes.

32. (Withdrawn). The vector of claim 27, wherein the vector is administered to a patient in an effective therapeutic amount to treat the patient suffering from or susceptible to heart disease and/or muscle contractile disorders.

33. (Withdrawn). A method of generating antibodies, wherein binding of the antibodies to an epitope of the α -subunit of $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$ exerts a positive inotropic effect in cardiac myocytes, comprising: generating amino acid sequences corresponding to overlapping peptide fragments of the α -subunit of $(\text{Na}^+ + \text{K}^+)\text{-ATPase}$ and variants thereof; and, obtaining antibodies specific for each peptide fragment by standard methods; and, determining the effects of the antibodies on intracellular diastolic and systolic calcium levels and cell shortenings as compared to controls.

34. (Withdrawn). The method of claim 33, wherein binding of the antibodies to the α -subunit of $(\text{Na}^{++}\text{K}^{+})$ -ATPase exerts a positive inotropic effect in cardiac myocytes.

35. (Withdrawn). The method of claim 34, wherein binding of the antibodies to the α -subunit of $(\text{Na}^{+}\text{K}^{+})$ -ATPase increases myocyte intracellular diastolic and systolic calcium.

36. (Withdrawn). The method of claim 35, wherein binding of the antibodies to the α -subunit of $(\text{Na}^{+}\text{K}^{+})$ -ATPase increases myocytes contractions as compared to controls.

37. (Withdrawn). The method of claim 34, wherein the antibodies generated are polyclonal antibodies.

38. (Withdrawn). The method of claim 34, wherein the antibodies generated are monoclonal antibodies.